



# STIC Search Report

## EIC 1700

STIC Database Tracking Number: 108476

**TO: Kallambella M Vijayakumar**  
**Location: CP3 9B13**  
**Art Unit : 1751**  
**November 24, 2003**

**Case Serial Number: 09/932186**

**From: Barba Koroma**  
**Location: EIC 1700**  
**CP3/4-3D62**  
**Phone: 305-3542**

**barba.koroma@uspto.gov**

### Search Notes

Examiner Vijaykumar,

Please find attached results of the search you requested. Note that the titles of hits have been listed to help you go through the results set quickly. This is followed by a detailed printout of records.

Various components of the claimed invention as spelt out in the search request and in the claims were searched in REGISTRY and CAPLUS databases. Please note that the priority document to this case does not include indexed structures.

Please let me know if you have any questions.  
Thanks.

=> file reg

FILE 'REGISTRY' ENTERED AT 17:48:31 ON 24 NOV 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 23 NOV 2003 HIGHEST RN 620098-11-5  
DICTIONARY FILE UPDATES: 23 NOV 2003 HIGHEST RN 620098-11-5

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> file CAPLUS

FILE 'CAPLUS' ENTERED AT 17:48:35 ON 24 NOV 2003  
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FILE COVERS 1907 - 24 Nov 2003 VOL 139 ISS 22  
FILE LAST UPDATED: 23 Nov 2003 (20031123/ED)

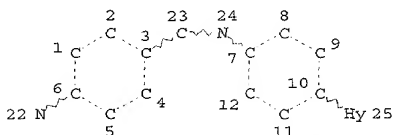
This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE

L8 ( 1227109)SEA FILE=CAPLUS ABB=ON PLU=ON PHOTO?  
L9 ( 57569)SEA FILE=CAPLUS ABB=ON PLU=ON G02F00?/IC  
L10 ( 400327)SEA FILE=CAPLUS ABB=ON PLU=ON INK? OR DYE?

KOROMA BIC1700

L11 ( 35715)SEA FILE=CAPLUS ABB=ON PLU=ON ELECTROOPT?  
 L12 ( 330002)SEA FILE=CAPLUS ABB=ON PLU=ON IMAGE? OR IMAGING?  
 L13 ( 2658)SEA FILE=CAPLUS ABB=ON PLU=ON ELECTRO? (5A) INK?  
 L14 ( 98826)SEA FILE=CAPLUS ABB=ON PLU=ON VISUAL?  
 L15 ( 603902)SEA FILE=CAPLUS ABB=ON PLU=ON COLOR?  
 L16 ( 885)SEA FILE=CAPLUS ABB=ON PLU=ON MOLEC? DEVICE?  
 L18 STR



NODE ATTRIBUTES:

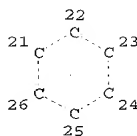
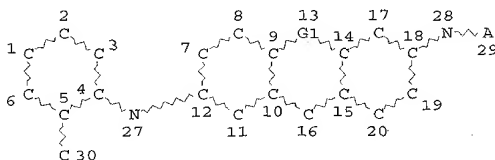
CONNECT IS E2 RC AT 23  
 CONNECT IS E2 RC AT 24  
 DEFAULT MLEVEL IS ATOM  
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 DEFAULT ECLEVEL IS LIMITED  
 ECOUNT IS M1 N AT 25

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L23 96 SEA FILE=REGISTRY SSS FUL L18  
 L26 STR



A 31

VAR G1=S/O/N/C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE

L28 335 SEA FILE=REGISTRY SSS FUL L26

KOROMA EIC1700

L29 29 SEA FILE=CAPLUS ABB=ON PLU=ON L23  
 L30 159 SEA FILE=CAPLUS ABB=ON PLU=ON L28  
 L31 188 SEA FILE=CAPLUS ABB=ON PLU=ON L29 OR L30  
 L32 167 SEA FILE=CAPLUS ABB=ON PLU=ON (L8 OR L9 OR L10 OR L11 OR L12  
 OR L13 OR L14 OR L15 OR L16) AND L31  
 L33 4 SEA FILE=CAPLUS ABB=ON PLU=ON L32 AND (INK? OR DYE? OR  
 COLOR?) AND ?ELECTRIC?  
 L34 161 SEA FILE=CAPLUS ABB=ON PLU=ON L32 AND (INK? OR DYE? OR  
 COLOR?)  
 L35 16 SEA FILE=CAPLUS ABB=ON PLU=ON L34 AND PHOTO?  
 L36 18 SEA FILE=CAPLUS ABB=ON PLU=ON L33 OR L35

=> d ti 1-18 l36

L36 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI First hyperpolarizability in proton-transfer benzoxazoles: computer-aided  
 design, synthesis and study of a new model compound

L36 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Fluoran compound and color recording material

L36 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Heat-fixable leuco dye-containing photoimaging  
 material

L36 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Photothermographic material containing thermal fixable leuco  
 dye

L36 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Thermal transfer ink sheet containing thermochromic materials

L36 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Recording medium using leuco dye

L36 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Thermosensitive recording sheet

L36 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Fluoran compounds

L36 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Dichroic pigments for color liquid crystal display devices

L36 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Fluoran color formers

L36 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 TI Fluoran derivatives and their use in recording systems

L36 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Sensitization of free-radical **photographic** materials by optical development

L36 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Sensitization of free-radical sensitive materials by optical development. Relation between optical development characteristics and the molecular structure of color former

L36 ANSWER 14 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Phototropic photosensitive compositions containing fluoran colorformer

L36 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Carbonylic halides as activators for **phototropic** compositions

L36 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Energy beam recording materials

L36 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Optical and electron beam recording material

L36 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

TI Some classes of novel supersensitizers for 2,2'-cyanines

=> d ibib abs hitstr ind total 136

L36 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:777726 CAPLUS

DOCUMENT NUMBER: 136:87218

TITLE: First hyperpolarizability in proton-transfer benzoxazoles: computer-aided design, synthesis and study of a new model compound

AUTHOR(S): Hillebrand, Sandro; Segala, Maximiliano; Buckup, Tiago; Correia, Ricardo R. B.; Horowitz, Flavio; Stefani, Valter

CORPORATE SOURCE: Laboratorio de Novos Materiais Organicos, Departamento de Quimica Organica, Instituto de Quimica da Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, 91501-970, Brazil

SOURCE: Chemical Physics (2001), 273(1), 1-10  
CODEN: CMPHC2; ISSN: 0301-0104

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB With regard to second-order nonlinear optics (NLO) applications, a new class of 2-(2-hydroxyphenyl)benzoxazoles (HBO) was designed for a combination of high first hyperpolarizability ( $\beta$ ) with good **photothermal** stability, in association with a fast excited state intramol. proton transfer (ESIPT) mechanism. Semi-empirical optimization of mol. structures and ab initio calcns. of dipole moments were performed. Clear evidence was found that conditions such as conjugation efficiency

and electron donor/acceptor strength cannot be evaluated sep., due to structural changes in mol. spatial distribution. Exptl., a new fluorescent mol. of the HBO family, 2-(4-amino-2-hydroxyphenyl)-6-nitrobenzoxazole (BO6), was synthesized, purified, and characterized, including solvent environments of distinct polarities. Hyper-Rayleigh scattering, UV-visible absorption and emission spectroscopy, differential scanning calorimetry, and thermogravimetric anal. of BO6 show a significant  $\beta$  ( $213.4 \pm 25.7 + 10\text{-}30$  esu in acetone, at 1064 nm) and thermal stability up to 270°C. Such results, in this first study of ESIPT dyes for second-order NLO to our best knowledge, indicate that the HBO family well deserves further attention towards promising application materials.

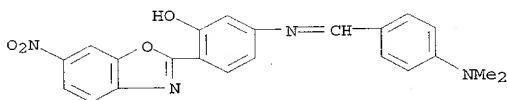
IT 387334-23-8 387334-30-7

RL: PRP (Properties); TEM (Technical or engineered material use); PRP (Properties); USES (Uses)

(calculated first hyperpolarizability in proton-transfer benzoxazole fluorescent dyes)

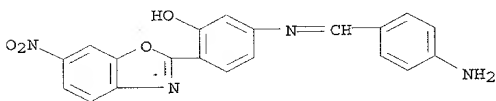
RN 387334-23-8 CAPLUS

CN Phenol, 5-[[[4-(dimethylamino)phenyl]methylene]amino]-2-(6-nitro-2-benzoxazolyl)- (9CI) (CA INDEX NAME)



RN 387334-30-7 CAPLUS

CN Phenol, 5-[[[4-(aminophenyl)methylene]amino]-2-(6-nitro-2-benzoxazolyl)- (9CI) (CA INDEX NAME)



CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 28, 73

ST hydroxyphenylbenzoxazole fluorescent dye prepn hyperpolarizability proton transfer

IT Light scattering

(by proton-transfer benzoxazole fluorescent dyes) ✓

IT Fluorescent dyes

(calculated first hyperpolarizability in proton-transfer benzoxazole fluorescent dyes)

IT Hyperpolarizability

(first; of proton-transfer benzoxazole fluorescent dyes)

IT Proton transfer  
(intramol., excited state; in benzoxazole fluorescent dyes)

IT Dipole moment  
Fluorescence  
Optical hyperpolarizability  
Thermal stability  
UV and visible spectra  
(of proton-transfer benzoxazole fluorescent dyes)

IT Solvent polarity effect  
(on absorption and emission spectra of proton-transfer benzoxazole fluorescent dye)

IT Bond angle  
(torsional; in proton-transfer benzoxazole fluorescent dyes)

IT 835-64-3 13459-18-2 158548-84-6 387334-13-6 387334-15-8  
387334-16-9 387334-20-5 387334-21-6 387334-22-7 387334-23-8  
387334-24-9 387334-25-0 387334-26-1 387334-27-2 387334-28-3  
387334-29-4 387334-30-7  
RL: PRP (Properties); TEM (Technical or engineered material use); PRP (Properties); USES (Uses)  
(calculated first hyperpolarizability in proton-transfer benzoxazole fluorescent dyes)

IT 387334-18-1, 2-(4-Amino-2-hydroxyphenyl)-6-nitrobenzoxazole  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PRP (Properties); USES (Uses)  
(preparation and first hyperpolarizability of proton-transfer benzoxazole fluorescent dye)

IT 67-56-1, Methanol, uses 67-66-3, Chloroform, uses 108-88-3, Toluene, uses 109-99-9, THF, uses 123-91-1, Dioxane, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(solvent effect on absorption and emission spectra of proton-transfer benzoxazole fluorescent dye)

IT 65-49-6, 4-Aminosalicylic acid 121-88-0, 5-Nitro-2-aminophenol 1516-60-5, 4-Nitrophenyl azide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; preparation and first hyperpolarizability of proton-transfer benzoxazole fluorescent dye)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:275693 CAPLUS

DOCUMENT NUMBER: 122:147416

TITLE: Fluoran compound and color recording material

INVENTOR(S): Tsubota, Harumitsu; Ishida, Hidekazu; Kawai, Hajime

PATENT ASSIGNEE(S): Yamada Chem Co, Japan

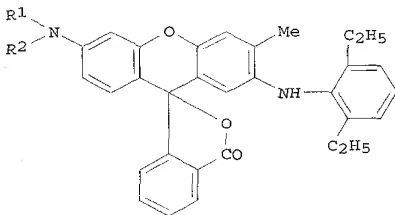
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06286302	A2	19941011	JP 1993-112037	19930402 ✓
PRIORITY APPLN. INFO.:			JP 1993-112037	19930402
OTHER SOURCE(S):	MARPAT 122:147416			
GI				



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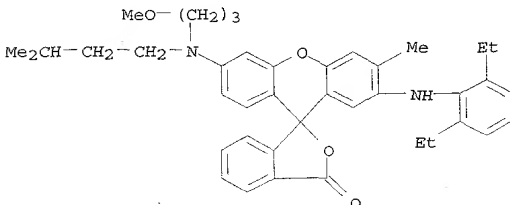
AB The compound is I (R1 = alkoxyated C2-8 alkyl; R2 = C1-8 alkyl). The color recording material containing I is also claimed. The recording method may be pressure, heat, elec., etc. The compound gives black images with light and moisture resistance.

IT 160850-16-8P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluoran compound-containing color recording material for black image)

RN 160850-16-8 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'-[(2,6-diethylphenyl)amino]-6'-[(3-methoxypropyl)(3-methylbutyl)amino]-3'-methyl-(9CI) (CA INDEX NAME)



KOROMA EIC1700

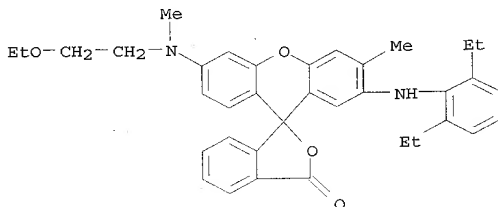


IT 160850-17-9 160850-18-0 160850-19-1

RL: TEM (Technical or engineered material use); USES (Uses)  
(fluoran compound-containing color recording material for black  
image)

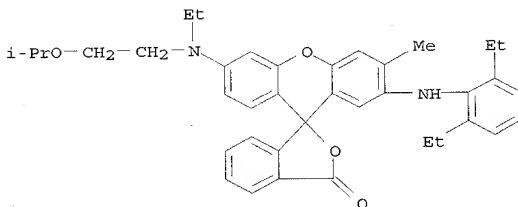
RN 160850-17-9 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'--[(2,6-  
diethylphenyl)amino]-6'--[2-ethoxyethyl)methylamino]-3'-methyl- (9CI) (CA  
INDEX NAME)



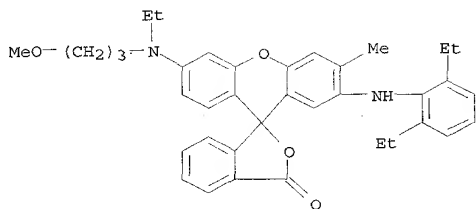
RN 160850-18-0 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'--[(2,6-  
diethylphenyl)amino]-6'--[ethyl 2-(1-methylethoxy)ethyl]amino]-3'-methyl-  
(9CI) (CA INDEX NAME)



RN 160850-19-1 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'--[(2,6-  
diethylphenyl)amino]-6'--[ethyl (3-methoxypropyl)amino]-3'-methyl- (9CI)  
(CA INDEX NAME)



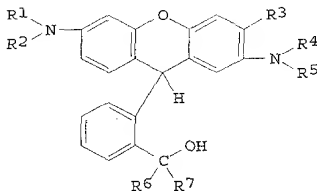
- IC ICM B41M005-145  
ICS B41M005-30; C09B011-28
- CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST fluoran color recording material
- IT Printing, impact  
(fluoran compound-containing color recording material for black image)
- IT Printing, nonimpact  
(thermal, fluoran compound-containing color recording material for black image)
- IT 160850-16-8P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluoran compound-containing color recording material for black image)
- IT 160850-17-9 160850-18-0 160850-19-1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(fluoran compound-containing color recording material for black image)
- IT 160850-21-5P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(in fluoran compound preparation)
- IT 160850-20-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in fluoran compound preparation)
- IT 579-66-8, 2,6-Diethylaniline  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with acetic anhydride)
- IT 16665-89-7P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(reaction with bromomethylanisole)
- IT 14804-31-0, 4-Bromo-2-methylanisole  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with diethylacetanilide)

L36 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

KOROMA EIC1700

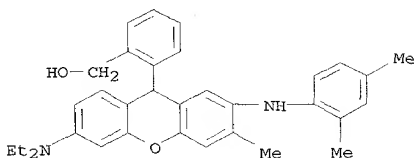
ACCESSION NUMBER: 1994:496012 CAPLUS  
DOCUMENT NUMBER: 121:96012  
TITLE: Heat-fixable leuco dye-containing  
photoimaging material  
INVENTOR(S): Yanagihara, Naoto  
PATENT ASSIGNEE(S): Fuji Photo Film Co Ltd, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05232622	A2	19930910	JP 1992-32031	19920219
PRIORITY APPLN. INFO.: GI			JP 1992-32031	19920219



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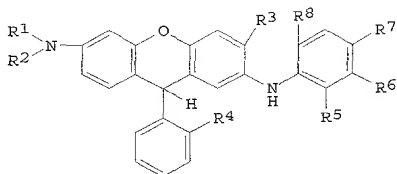
- AB In the title photoimaging material having on its support a  
coating layer containing a reducing agent and (microcapsules) enclosing a leuco  
dye capable of giving color on being oxidized, a  
photo-oxidizing agent and optionally an antioxidant, the leuco  
dye is a xanthene derivative I (R1, R2 = H, alkyl, aralkyl, aryl; R3 =  
H, alkyl, alkoxy, aryl, halo; R4-6 = H, alkyl, aryl; R1 with R2, R4 with  
R5 may joint to form unsatd. ring or heterocycle). The  
photoimaging material is free of fog before using and can give  
images with high-d. and superior stability .
- IT 151194-98-8, 9-(2-Hydroxymethylphenyl)-2-[(2,4-dimethylphenyl)amino]-  
3-methyl-6-diethylaminoxanthene  
RL: USES (Uses)  
(heat-fixable leuco dye, photoimaging material  
using)
- RN 151194-98-8 CAPLUS
- CN Benzenemethanol, 2-[6-(diethylamino)-2-[(2,4-dimethylphenyl)amino]-3-  
methyl-9H-xanthen-9-yl]- (9CI) (CA INDEX NAME)



IC ICM G03C001-675  
 ICS G03C005-56; G03F007-004; G03F007-028  
 CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST heat fixable leuco dye photoimaging material  
 IT Photoimaging compositions and processes  
 (heat-fixable leuco dye using)  
 IT 151194-98-8, 9-(2-Hydroxymethylphenyl)-2-(2,4-dimethylphenyl)amino-3-methyl-6-diethylaminoxanthene 151194-99-9, 9-(2-Hydroxymethylphenyl)-2-(3-trifluoromethylphenyl)amino-6-diethylaminoxanthene  
 RL: USES (Uses)  
 (heat-fixable leuco dye, photoimaging material using)

L36 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1994:335057 CAPLUS  
 DOCUMENT NUMBER: 120:335057  
 TITLE: Photothermographic material containing thermal fixable leuco dye  
 INVENTOR(S): Yanagihara, Naoto; Wachi, Naotaka; Endo, Toshiaki  
 PATENT ASSIGNEE(S): Fuji Photo Film Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05127302	A2	19930525	JP 1991-311556	19911031
PRIORITY APPLN. INFO.:			JP 1991-311556	19911031
OTHER SOURCE(S):		MARPAT 120:335057		
GI				



I

AB In the title photothermog. material having on its support a coating layer containing at least a reducing agent and microcapsules which enclose a photo oxidizing agent and a leuco dye capable of giving color on being oxidized, the leuco dye is a xanthene I (R1 = H, R2; R2 = alkyl, alkenyl, alkynyl, aryl; R3 = alkyl, aryl, halo; R4 = alkyl, substituted carbonyl; R5 = Me, halo; R6-8 = H, Me, halo; R1 and R2 may joint to form a unsatd. ring or a heterocycle; xanthene and 9-position substituted benzene rings may be further substituted). The material can give images with high-d. and superior stable black hue.

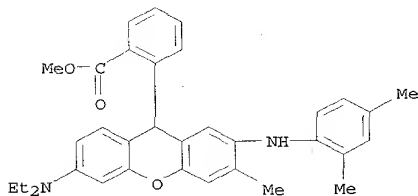
IT 155287-73-3, 9-(2-Methoxycarbonylphenyl)-2-(2,4-dimethylphenyl)amino-3-methyl-6-diethylaminoxanthene 155287-74-4, 9-(2-Diphenylmethyloxycarbonylphenyl)-2-(2,4-dimethylphenyl)amino-3-methyl-6-diethylaminoxanthene 155287-75-5, 9-(2-Methoxycarbonylphenyl)-2-(2,4,6-trimethylphenyl)amino-3-methyl-6-diethylaminoxanthene

RL: USES (Uses)

(leuco dye, for photothermog. material)

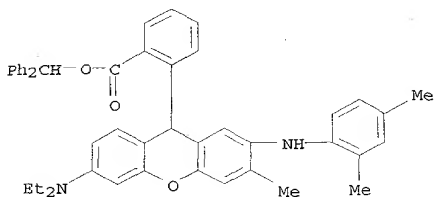
RN 155287-73-3 CAPLUS

CN Benzoic acid, 2-[6-(diethylamino)-2-[(2,4-dimethylphenyl)amino]-3-methyl-9H-xanthen-9-yl]-, methyl ester (9CI) (CA INDEX NAME)



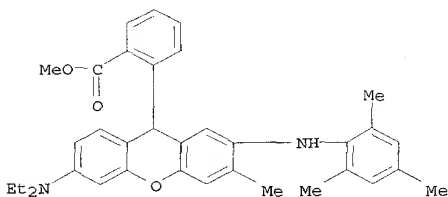
RN 155287-74-4 CAPLUS

CN Benzoic acid, 2-[6-(diethylamino)-2-[(2,4-dimethylphenyl)amino]-3-methyl-9H-xanthen-9-yl]-, diphenylmethyl ester (9CI) (CA INDEX NAME)



RN 155287-75-5 CAPLUS

CN Benzoic acid, 2-[6-(diethylamino)-3-methyl-2-[(2,4,6-trimethylphenyl)amino]-9H-xanthen-9-yl]-, methyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-675

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **photothermog** material leuco dye; xanthene  
**photothermog** material

IT Photothermographic copying  
(material for, amino xanthene derivative leuco dye using)

IT 155287-73-3, 9-(2-Methoxycarbonylphenyl)-2-(2,4-dimethylphenyl)amino-3-methyl-6-diethylaminoxanthene 155287-74-4, 9-(2-Diphenylmethyloxycarbonylphenyl)-2-(2,4-dimethylphenyl)amino-3-methyl-6-diethylaminoxanthene 155287-75-5, 9-(2-Methoxycarbonylphenyl)-2-(2,4,6-trimethylphenyl)amino-3-methyl-6-diethylaminoxanthene

RL: USES (Uses)

(leuco dye, for **photothermog**. material)

L36 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:505966 CAPLUS

DOCUMENT NUMBER: 119:105966

TITLE: Thermal transfer ink sheet containing thermochromic materials

KOROMA EIC1700

INVENTOR(S): Goto, Hiroshi; Kawamura, Eiichi  
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04314584	A2	19921105	JP 1991-114091	19910418
PRIORITY APPLN. INFO.:			JP 1990-326297	19901128
			JP 1991-48982	19910221

AB In the title ink sheet based on a thermal transfer ink layer coated on a heat-resistant support, the above ink layer is obtained with an ink based on microcapsules containing either thermally bleachable or thermally-coloring materials. A thermally-bleachable ink sheet uses microcapsules containing at least an electron-donor color former, an electron-acceptor compound, and a compound capable of adjusting the color-changing temperature. A thermally coloring ink sheet uses microcapsules containing in addition to the above 3 compds., a low-volatility solvent. The ink sheet shows reversible color change with temperature change as well as good durability.

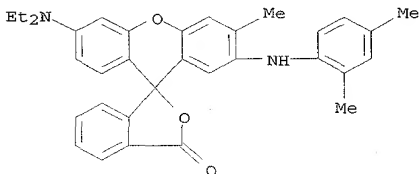
IT 36431-22-8

RL: USES (Uses)

(color former, thermal transfer ink sheet containing)

RN 36431-22-8 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-(diethylamino)-2'-[(2,4-dimethylphenyl)amino]-3'-methyl- (9CI) (CA INDEX NAME)



IC ICM B41M005-26

ICS B41M005-28; B41M005-30

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST thermal transfer ink sheet thermochromic; copyproof thermal transfer sheet

IT Printing, nonimpact

(thermal transfer sheet for, photocopy-proof)

IT Thermographic copying  
(transfer, materials for, thermochromic material-containing)  
IT 80-05-7, uses 94-13-3, p-Hydroxybenzoic acid propyl ester 94-18-8,  
p-Hydroxybenzoic acid benzyl ester 99-76-3, p-Hydroxybenzoic acid methyl  
ester 1166-52-5 10361-12-3  
RL: USES (Uses)  
(color developer, thermal transfer ink sheet  
containing)  
IT 34342-67-1 36431-22-8 89331-94-2 149309-77-3  
RL: USES (Uses)  
(color former, thermal transfer ink sheet containing)

L36 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1993:30090 CAPLUS  
DOCUMENT NUMBER: 118:30090  
TITLE: Recording medium using leuco dye  
INVENTOR(S): Araki, Katsumi; Takashima, Masanobu; Azuma, Shunsaku;  
Satomura, Masato  
PATENT ASSIGNEE(S): Fuji Shashin Film K. K., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04085075	A2	19920318	JP 1990-201848	19900730
PRIORITY APPLN. INFO.:			JP 1990-201848	19900730

GI For diagram(s), see printed CA Issue.

AB In the title recording medium (heat-sensitive, pressure-sensitive, photothermal, etc.) utilizing the color rendered upon contact between an electron-donor leuco dye and an electron-acceptor compound, the leuco dye is a fluoran compound (I)  
[R1 = H, alkyl, acyl; R2 = H, alkyl, acyl, alkoxy, halo; R3 = H, alkyl, aryl, acyl; R4 = H, alkyl, aryl, alkoxy, aryloxy, halo, alkylthio, arylthio, amine, CN, NO2, acyl, acyloxy; R5 = alkyl, aryl, heterocyclcyl; ring A is an aromatic ring; p = 1-5; x = (L<sup>6</sup>)a(L1)b(L2)c(L3)d(L4)e(L5)f(L6)g(L7)h (L0,L2,L4,L6 = O, NH, NHCO, CONH, NHSO2, SO2NH, CO2, OCO, NHCONH, OCONH, NHCO2, S, SO, SO2, CO; L1,L3,L5,L7 = alkylene, aralkylene, arylene; a-h = 0, 1 (b - c + d - e + f - g = 0)]. The recording material shows good color resolution, white background retention, good coloring material preservation, and good resistance to other chems.

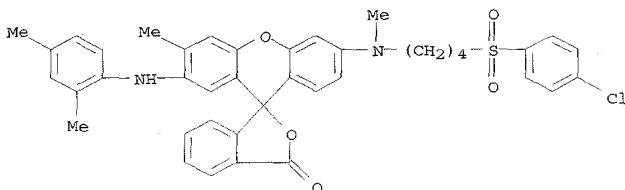
IT 144916-72-3  
RL: USES (Uses)  
(leuco dye, pressure- and/or heat-sensitive recording medium using)

RN 144916-72-3 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-[[4-[(4-chlorophenyl)sulfonyl]butyl]methylamino]-2'-[(2,4-dimethylphenyl)amino]-3'-



methyl- (9CI) (CA INDEX NAME)



IC ICM B41M005-145  
ICS B41M005-30  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST recording medium heat pressure fluoran  
IT Copying paper  
(leuco dye for)  
IT Thermographic copying  
(materials for, leuco dye for)  
IT Recording materials  
(impact, leuco dye for)  
IT Printing, nonimpact  
(thermal, material for, leuco dye for)  
IT 144916-71-2 144916-72-3 144916-73-4 144916-74-5  
RL: USES (Uses)  
(leuco dye, pressure- and/or heat-sensitive recording medium using)

L36 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1987:129443 CAPLUS  
DOCUMENT NUMBER: 106:129443  
TITLE: Thermosensitive recording sheet  
INVENTOR(S): Satake, Toshimi; Minami, Toshiaki; Nagai, Tomoaki; Fujimura, Fumio  
PATENT ASSIGNEE(S): Jujo Paper Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 50 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 189760	A1	19860806	EP 1986-100179	19860108
EP 189760	B1	19890719		

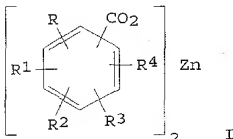
R: BE, DE, FR, GB, IT, SE

JP 61160293	A2	19860719	JP 1985-1868	19850109
JP 04017157	B4	19920325		
JP 61164884	A2	19860725	JP 1985-6515	19850117
JP 03074638	B4	19911127		
JP 61185484	A2	19860819	JP 1985-25739	19850213
JP 04017158	B4	19920325		

PRIORITY APPLN. INFO.:

JP 1985-1868	19850109
JP 1985-6515	19850117
JP 1985-25739	19850213

GI



AB A thermosensitive recording sheet has a heat-sensitive color-forming layer containing a basic leuco dye and an organic color developer consisting at least partly of a halogen-substituted benzoic acid Zn salt (I; R = halogen; R1 = H, halogen; R2, R3, R4 = H, OH, CN, NO2, alkyl, cycloalkyl, alkoxy). The thermosensitive recording sheet thus prepared has excellent thermal response, resistance to soiling by oily substances, such as hair-dressing agents or oils and fats, and storage stability. Thus, a dye dispersion prepared from crystal violet lactone, 10% poly(vinyl alc.), and H2O, a color developer dispersion prepared from Zn p-fluorobenzoate, 10% poly(vinyl alc.), and H2O, and a 50% kaolin dispersion were mixed, coated on a paper support, dried, and calendered to give a thermosensitive recording sheet which gave, upon thermal recording, an image of d. 1.17 and excellent stability.

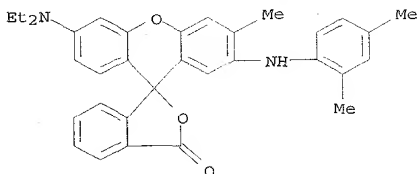
IT 36431-22-8

RL: USES (Uses)

(heat-sensitive color-forming comps. containing  
halogen-substituted benzoic acid zinc salt developer and, for thermal  
recording materials)

RN 36431-22-8 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one, 6'-(diethylamino)-2'-  
[(2,4-dimethylphenyl)amino]-3'-methyl- (9CI) (CA INDEX NAME)



- IC ICM B41M005-26  
ICS B41M005-12
- CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST thermal recording zinc fluorobenzoate developer
- IT Printing, nonimpact  
(thermal, heat-sensitive color-forming compns. containing leuco dye and halogen-substituted benzoic acid zinc salt developer for)
- IT 1552-42-7, Crystal violet lactone 29512-49-0 36431-22-8  
55250-84-5 55772-72-0, 3-Pyrrolidino-6-methyl-7-anilino-fluoran  
55773-64-3, 3-Piperidino-6-methyl-7-anilino-fluoran 59129-79-2  
68134-61-2 68506-98-9 70516-41-5 82137-81-3, 3-Dibutylamino-7-(o-chloroanilino)fluoran  
RL: USES (Uses)  
(heat-sensitive color-forming compns. containing halogen-substituted benzoic acid zinc salt developer and, for thermal recording materials)
- IT 79448-62-7, Zinc p-chlorobenzoate 106897-56-7, Zinc p-fluorobenzoate  
106897-57-8, Zinc p-bromobenzoate 106897-58-9, Zinc m-chlorobenzoate  
106897-59-0, Zinc 3,4-dichlorobenzoate 106909-21-1, Zinc p-iodobenzoate  
RL: USES (Uses)  
(heat-sensitive color-forming compns. containing leuco dye and, for thermal recording materials)
- IT 27294-37-7  
RL: USES (Uses)  
(heat-sensitive color-photocompns. containing leuco dye and halogen-substituted benzoic acid zinc salt developer and, for thermal recording materials)

L36 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:470193 CAPLUS

DOCUMENT NUMBER: 105-7Q193

TITLE: Fluoran compounds

INVENTOR(S): Anzai, Mitsutoshi; Yamaguchi, Masahiko; Wakasugi, Kazuyuki; Suzuki, Susumu; Gonda, Michihiro; Abe, Toshiyuki; Kikkawa, Katsumasa; Kanasugi, Mikiko  
Hodogaya Chemical Co., Ltd., Japan

PATENT ASSIGNEE(S):

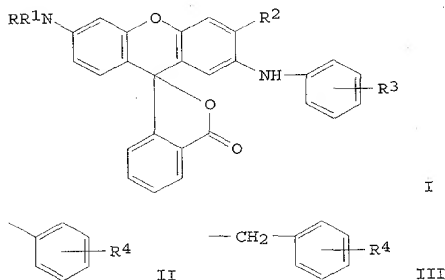
SOURCE: Eur. Pat. Appl., 39 pp.

CODEN: EPXXDW

KOROMA EIC1700

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 156250	A2	19851002	EP 1985-102892	19850313
EP 156250	A3	19890208		
EP 156250	B1	19940727		
R: DE, FR, GB				
JP 60199065	A2	19851008	JP 1984-55285	19840324
JP 60208359	A2	19851019	JP 1984-65096	19840403
JP 03076346	B4	19911205		
JP 60209586	A2	19851022	JP 1984-65095	19840403
US 4612558	A	19860916	US 1985-710991	19850312
PRIORITY APPLN. INFO.:			JP 1984-55285	19840324
			JP 1984-65095	19840403
			JP 1984-65096	19840403
OTHER SOURCE(S):			CASREACT 105:70193	
GI				



AB A novel fluoran compound having the formula I [R,R1 = H, C1-8 alkyl, cyclohexyl, Ph, or benzyl; R2 = II, III, or (CH2)<sup>n</sup>OR5 where R4 = H, halogen, or C1-8 alkyl; R5 = cycloalkyl, Ph, benzyl, or C1-8 alkyl; n = 1-8; R3 = H, halogen, lower fluoroalkyl, acyl, alkoxy, alkoxyalkyl, or C1-8 alkyl] is used as a color former in a heat-sensitive, electrothermal, or photosensitive recording sheet to provide dark black images upon development with an acidic substance with improved resistances to moisture and oils. Thus, a dispersion (A) comprised of 2-anilino-3-ethoxyethyl-6-diethylaminofluoran 4, 10% poly(vinyl alc.) 34, and a 5% solution of San Nopco 1407 (a defoaming agent) 2 parts, a dispersion (B) comprised of bisphenol A 6, 10% poly(vinyl alc.) 20, and H2O 14 parts, and a dispersion (C) comprised of Al(OH)<sub>3</sub> 10, 10%

poly(vinyl alc.) 20, and H<sub>2</sub>O 10 parts were prepared, mixed in a A:B:C:H<sub>2</sub>O ratio of 3:9:5:3, coated on a paper support at 5 g/m<sup>2</sup> (dry basis), and dried to give a thermal recording paper which gave images having a humidity discoloration resistance of 102 and an oil resistance of 45 vs. 94 and 39, resp., for a control using 2-anilino-3-methyl-6-diethylaminofluoran.

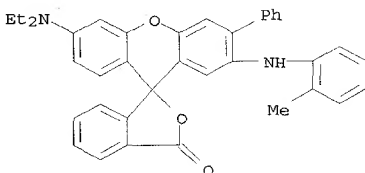
IT 101510-51-4 102231-59-4 102231-70-9

RL: USES (Uses)

(color former, for thermal recording materials)

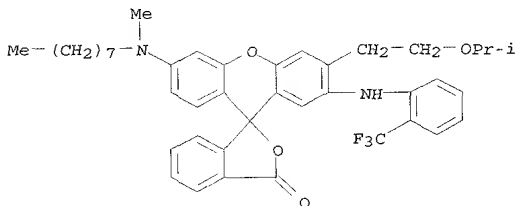
RN 101510-51-4 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-[(2-methylphenyl)amino]-3'-phenyl- (9CI) (CA INDEX NAME)



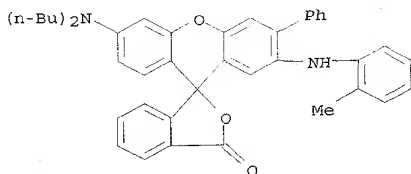
RN 102231-59-4 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3'-[2-(1-methylethoxy)ethyl]-6'-[(methyloctylamino)-2'-[2-(trifluoromethyl)phenyl]amino]- (9CI) (CA INDEX NAME)



RN 102231-70-9 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-[(dibutylamino)-2'-[(2-methylphenyl)amino]-3'-phenyl- (9CI) (CA INDEX NAME)



IC ICM C07D493-10  
ICS B41M005-18

ICI C07D493-10, C07D311-00, C07D307-00

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 28

ST fluoran phenylaminodialkylamino thermal recording material; electrothermal recording material fluoran; **photosensitive** recording material fluoran

IT **Photoduplication**  
(phenylaminodialkylaminofluoran color formers for)

IT Recording materials  
(electrothermal, phenylaminodialkylaminofluoran color formers for)

IT Recording materials  
(thermal, phenylaminodialkylaminofluoran color formers for)

IT 99740-47-3 99740-52-0 100551-38-0 100551-39-1 100551-40-4  
100551-41-5 100551-42-6 100551-43-7 100551-44-8 100551-45-9  
100578-76-5 101510-38-7 101510-39-8 101510-40-1 101510-41-2  
101510-45-6 101510-46-7 101510-47-8 101510-48-9 101510-49-0  
101510-50-3 101510-51-4 101510-55-8 101510-56-9  
101528-33-0 102231-52-7 102231-53-8 102231-54-9 102231-55-0  
102231-56-1 102231-57-2 102231-58-3 102231-59-4  
102231-60-7 102231-61-8 102231-62-9 102231-63-0 102231-64-1  
102231-65-2 102231-66-3 102231-67-4 102231-68-5 102231-69-6  
102231-70-9 102231-71-0 102231-72-1 102231-73-2  
102231-74-3 102231-75-4 102231-76-5 102231-77-6 102231-78-7  
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102231-84-5 102231-85-6 102231-86-7 102231-87-8 102231-88-9  
102231-89-0 102231-90-3 102231-91-4 102231-92-5 102231-93-6  
102259-20-1 102259-21-2 102259-22-3

RL: USES (Uses)  
(color former, for thermal recording materials)

IT 80-05-7, uses and miscellaneous 9002-89-5 21645-51-2, uses and miscellaneous  
RL: USES (Uses)  
(heat-sensitive color-forming compns. containing phenylaminodialkylaminofluoran color former and, for thermal recording materials)

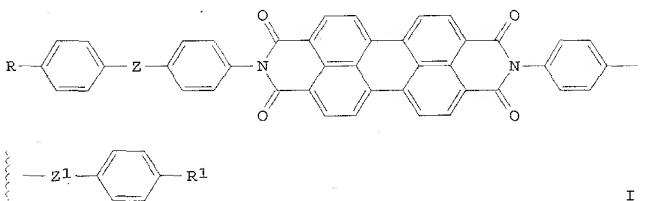
IT 5809-23-4 54574-82-2 55109-91-6 91458-42-3 99740-57-5

100640-95-7 100640-96-8 102231-94-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, in preparation of fluoran color former for thermal  
 recording materials)

L36 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1985:624495 CAPLUS  
 DOCUMENT NUMBER: 103:224495  
 TITLE: Dichroic pigments for color liquid crystal  
 display devices  
 PATENT ASSIGNEE(S): Alps Electric Co., Ltd., Japan; Sanyo Color Works,  
 Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp..  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60023452	A2	19850206	JP 1983-130364	19830719
JP 61016788	B4	19860502		
US 4607097	A	19860819	US 1984-616722	19840604
PRIORITY APPLN. INFO.:			JP 1983-98057	19830603
			JP 1983-130364	19830719
			JP 1983-130365	19830719
			JP 1983-132910	19830722
			JP 1983-133581	19830723

GI



AB Dichroic pigments I [R, R1 = alkyl, alkoxy, NR2R3; R2, R3 = H, alkyl; Z,  
 Z1 = N:CH(Z2Z3)n, CH:N(Z2Z3)n; Z2 = 1,4-C6H4, 1,4-C10H6; Z3 = N:N, CH:N,  
 N(O):N; n = 0-2] are contained in the liquid crystal compns. The pigments  
 have a high dichroic ratio, a large adsorption coefficient, and solubility in  
 liquid

KOROMA EIC1700

crystals; hence they are especially useful in guest-host color liquid crystal display devices. Thus, I [R, R1 = NBU2; Z = N:CH; Z1 = CH:N] was dissolved in a cyanobiphenyl liquid crystal composition of pos. dielec. anisotropy and packed in a cell (homogeneous alignment) to give a guest-host liquid crystal display device. The maximum absorption, solubility,

and

dichroic ratio of the pigment were 500 nm, 2.0%, and 14.3, resp.

IT 99290-53-6 99290-55-8

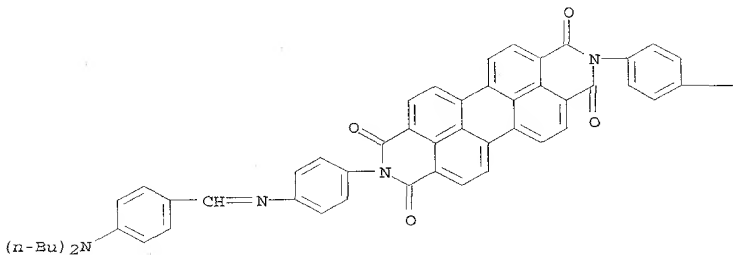
RL: USES (Uses)

(guest-host liquid crystal color display devices containing)

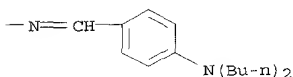
RN 99290-53-6 CAPLUS

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[4-[[4-(dibutylamino)phenyl]methylene]amino]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

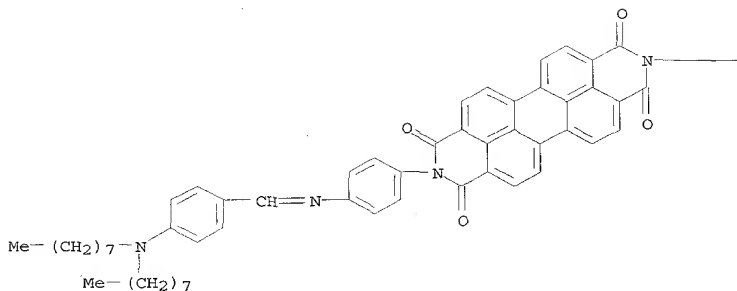


RN 99290-55-8 CAPLUS

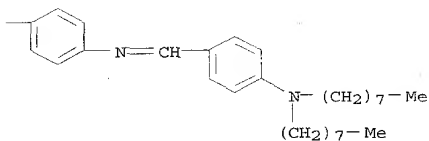
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[4-[[4-(dioctylamino)phenyl]methylene]amino]phenyl]- (9CI) (CA INDEX NAME)



PAGE 1-A



PAGE 1-B



IC ICM C09B055-00  
ICS C09K019-60  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST dichroic pigment liq crystal display; guest host liq crystal dye  
; perylene azo pigment liq crystal  
IT Optical imaging devices  
(electro-, guest-host, perylene azo dichroic pigments for)  
IT 99290-53-6 99290-54-7 99290-55-8 99300-37-5  
RL: USES (Uses)  
(guest-host liquid crystal color display devices containing)  
IT 28804-96-8D, derivs.  
RL: USES (Uses)  
(liquid crystal compns. containing perylene azo dichroic pigment and, for guest-host electrooptical color display devices)

L36 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1984:69867 CAPLUS

KOROMA EIC1700

DOCUMENT NUMBER: 100:69867  
 TITLE: Fluoran color formers  
 PATENT ASSIGNEE(S): Kanzaki Paper Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

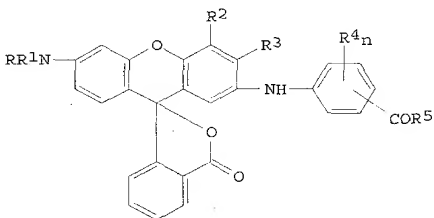
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 581474S7	A2	19830902	JP 1982-31465	19820226
US 4524373	A	19850618	US 1983-467286	19830217
EP 89752	A2	19830928	EP 1983-300943	19830223
EP 89752	A3	19850626		
EP 89752	B1	19880420		

R: CH, DE, FR, GB, LI

PRIORITY APPLN. INFO.:

JP 1982-30058	19820224
JP 1982-31465	19820226
JP 1982-31543	19820227
JP 1982-64231	19820416
JP 1982-67632	19820421
JP 1983-67632	19820421
JP 1982-76972	19820506
JP 1982-178144	19821008

GI



I

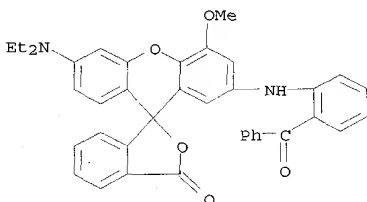
AB Fluorans I (R, R1 = C1-12 alkyl, C7-9 aralkyl; R2 = H, halogen, C1-4 alkyl, C1-2 alkoxy; R3 = H, halogen, C1-4 alkyl, excluding R2 = R3 = H; R4 = halogen, C1-4 alkyl, C1-2 alkoxy; R5 = C1-18 alkyl, substituted or unsubstituted aryl; n = 0-4) useful in pressure-, heat-, and photosensitive recording media were prepared Thus, 2-(4-diethylamino-2-hydroxybenzoyl)benzoic acid [5809-23-4] was treated with 4-acetyl-4'-methoxy-3'-methylidiphenylamine [88429-18-9] in concentrated

H2SO4 at room temperature for 24 h to give 85% 7-(p-acetylanilino)-3-diethylamino-5-methylfluoran [88429-44-1], black on silica gel.

IT 88429-46-3 88429-47-4 88429-51-0  
88430-41-5 88697-02-3 88697-03-4  
88697-04-5  
RL: USES (Uses)  
(color formers, for recording materials, manufacture of)

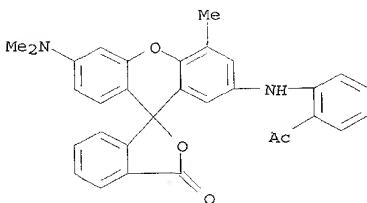
RN 88429-46-3 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-(diethylamino)-4'-methoxy- (9CI) (CA INDEX NAME)



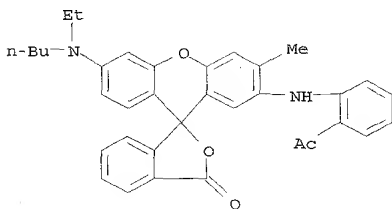
RN 88429-47-4 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one, 2'-[(2-acetylphenyl)amino]-6'-(dimethylamino)-4'-methyl- (9CI) (CA INDEX NAME)



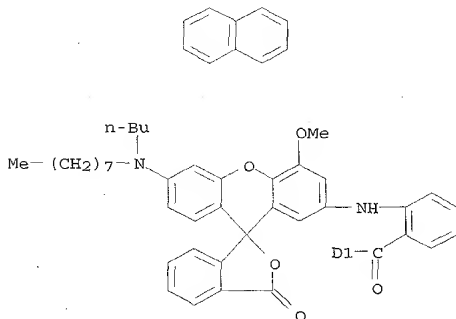
RN 88429-51-0 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one, 2'-[(2-acetylphenyl)amino]-6'-(butylethylamino)-3'-methyl- (9CI) (CA INDEX NAME)



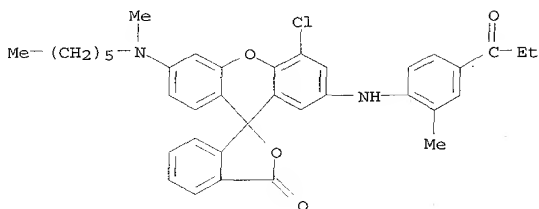
RN 88430-41-5 CAPLUS

CN Spiro[isobenzofuran-1(3H), 9'-(9H)xanthen]-3-one, 6'-(butyloctylamino)-4'-methoxy-2'-[[2-(naphthalenylcarbonyl)phenyl]amino]- (9CI) (CA INDEX NAME)



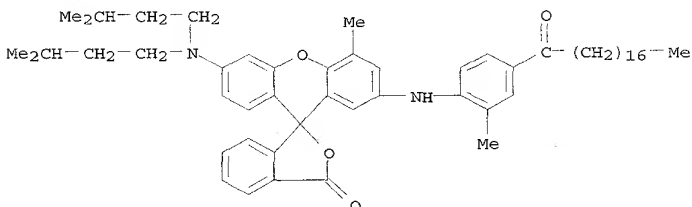
RN 88697-02-3 CAPLUS

CN Spiro[isobenzofuran-1(3H), 9'-(9H)xanthen]-3-one, 4'-chloro-6'-(hexylmethylamino)-2'-[[2-methyl-4-(1-oxopropyl)phenyl]amino]- (9CI) (CA INDEX NAME)



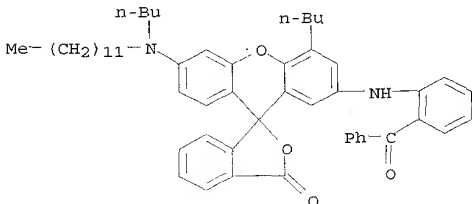
RN 88697-03-4 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-[bis(3-methylbutyl)amino]-4'-methyl-2'-[[2-methyl-4-(1-oxooctadecyl)phenyl]amino]- (9CI) (CA INDEX NAME)



RN 88697-04-5 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-4'-butyl-6'-(butyldodecylamino)- (9CI) (CA INDEX NAME)



IC C09B011-28; B41M005-12

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

ST fluoran color former heat sensitive; heat sensitive recording color former; photosensitive fluoran color former; pressure sensitive copying paper fluoran

IT Dyes  
(color formers, (acylanilino)amino fluoran derivs., for recording systems)

IT Copying paper  
(pressure-sensitive, fluoran color formers for)

IT Recording materials  
(thermal, fluoran color formers for)

IT 88429-44-1 88429-45-2 88429-46-3 88429-47-4  
88429-48-5 88429-49-6 88429-50-9 88429-51-0 88429-52-1  
88429-53-2 88430-41-5 88433-20-9 88690-49-7  
88697-02-3 88697-03-4 88697-04-5  
RL: USES (Uses)  
(color formers, for recording materials, manufacture of)

IT 88429-18-9 88429-19-0 88429-20-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with (hydroxybenzoyl)benzoic acid derivs.)

IT 5809-23-4 85448-87-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with diphenylamine derivs.)

L36 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1984:43139 CAPLUS  
DOCUMENT NUMBER: 100:43139  
TITLE: Fluoran derivatives and their use in recording systems  
INVENTOR(S): Kondo, Mitsuru; Iwasaki, Hiroshi; Kanda, Nobuo;  
Omatsu, Masayuki; Omura, Haruo  
PATENT ASSIGNEE(S): Kanzaki Paper Mfg. Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 92 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 5  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 89752	A2	19830928	EP 1983-300943	19830223
EP 89752	A3	19850626		
EP 89752	B1	19880420		
R: CH, DE, FR, GB, LI				
JP 58145760	A2	19830830	JP 1982-30058	19820224
JP 02037359	B4	19900823		
JP 58147457	A2	19830902	JP 1982-31465	19820226
JP 58149952	A2	19830906	JP 1982-31543	19820227
JP 58180556	A2	19831022	JP 1982-64231	19820416
JP 58191753	A2	19831109	JP 1982-76972	19820506
JP 59066458	A2	19840414	JP 1982-178144	19821008
PRIORITY APPLN. INFO.:			JP 1982-30058	19820224
			JP 1982-31465	19820226

KOROMA EIC1700

JP 1982-31543	19820227
JP 1982-64231	19820416
JP 1983-67632	19820421
JP 1982-76972	19820506
JP 1982-178144	19821008

AB Color formers which are useful in various recording systems (pressure-, photo- and heat-sensitive) and provide deep-black color images upon contact with an electron accepting acidic reactant comprise fluoran derivs. Thus, 62 parts of a pulverized mixture (average particle size 2  $\mu$ ) of 3-diethylamino-6-methyl-7- $\alpha$ -naphthylaminofluoran 5, stearic acid amide 1, and 2% aqueous hydroxyethylcellulose 25 parts and 31 parts of a pulverized mixture (average particle size 2  $\mu$ ) of 4,4'-isopropylidenediphenol 50, stearic acid amide 10, and 2% aqueous hydroxyethylcellulose 250 parts were mixed with Syloid 244 25, 20% aqueous salt of styrene-maleic anhydride copolymer 175, Zn stearate 5, and H<sub>2</sub>O 100 parts and coated on a support at an amount of 6 g/m<sup>2</sup> to give a heat-sensitive recording material which was pressed with a pressure of 4 kg/m<sup>2</sup> for 5 s on a plate heated at 125° to provide a deep black image with a superior resistance to light-induced fading.

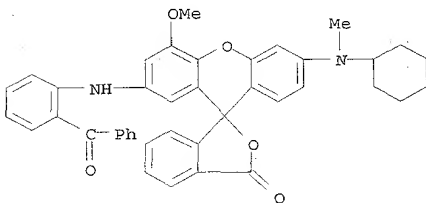
IT 88430-00-6P 88430-10-8P

RL: PREP (Preparation)

(preparation of, for photoimaging and recording)

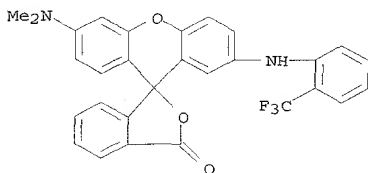
RN 88430-00-6 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'--(cyclohexylmethylamino)-4'-methoxy- (9CI) (CA INDEX NAME)



RN 88430-10-8 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'--(dimethylamino)-2'-[[2-(trifluoromethyl)phenyl]amino]- (9CI) (CA INDEX NAME)



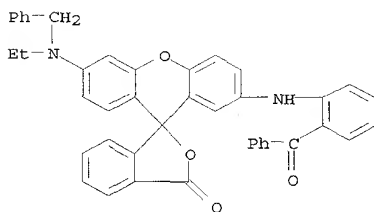
IT 88429-70-3P 88429-78-1P 88429-79-2P  
88429-80-5P

RL: PREP (Preparation)

(preparation of, for recording and photoimaging)

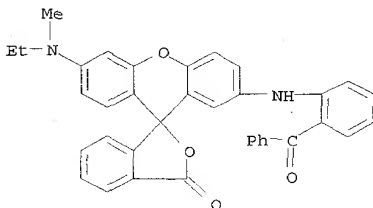
RN 88429-70-3 CAPLUS

CN Spiro[isobenzofuran-1(3H), 9'-(9H)xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-[ethyl(phenylmethyl)amino]- (9CI) (CA INDEX NAME)



RN 88429-78-1 CAPLUS

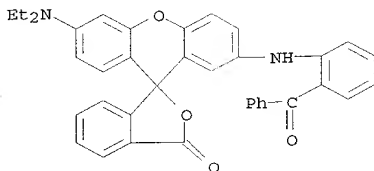
CN Spiro[isobenzofuran-1(3H), 9'-(9H)xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-[ethyl(phenylmethyl)amino]- (9CI) (CA INDEX NAME)



RN 88429-79-2 CAPLUS

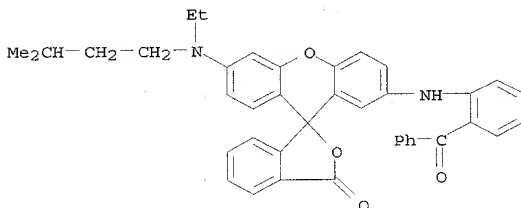
CN Spiro[isobenzofuran-1(3H), 9'-(9H)xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-[diethylamino]- (9CI) (CA INDEX NAME)





RN 88429-80-5 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-[ethyl(3-methylbutyl)amino]- (9CI) (CA INDEX NAME)



IT 88429-46-3P 88429-47-4P 88429-51-0P

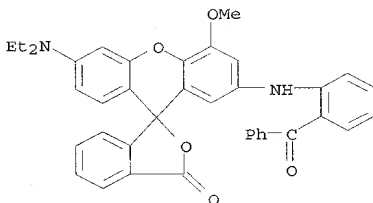
88429-54-3P 88430-41-5P

RL: PREP (Preparation)

(preparation of, for recording and photoimaging systems)

RN 88429-46-3 CAPLUS

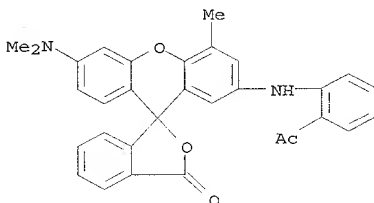
CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-[diethylamino]-4'-methoxy- (9CI) (CA INDEX NAME)



RN 88429-47-4 CAPLUS

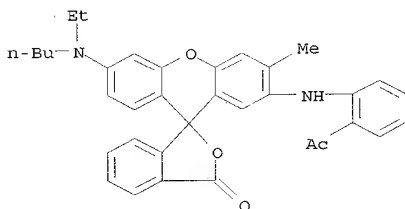
KOROMA EIC1700

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'-[(2-acetylphenyl)amino]-6'-(dimethylamino)-4'-methyl- (9CI) (CA INDEX NAME)



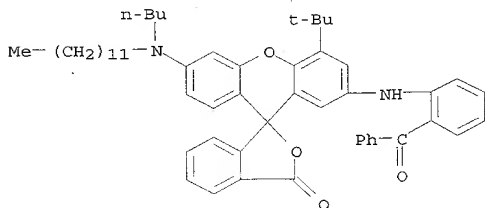
RN 88429-51-0 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'-[(2-acetylphenyl)amino]-6'-(butylethylamino)-3'-methyl- (9CI) (CA INDEX NAME)



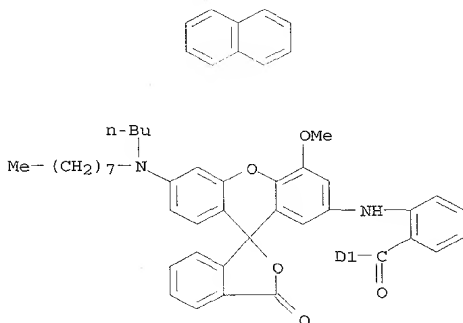
RN 88429-54-3 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2'-[(2-benzoylphenyl)amino]-6'-(butyldodecylamino)-4'-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



RN 88430-41-5 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-(butyloctylamino)-4'-methoxy-2'-[2-(naphthalenylcarbonyl)phenyl]amino]- (9CI) (CA INDEX NAME)



- IC C07D493-10; B41M005-00
- CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST heat pressure recording black **image**; thermal recording fluoran **color former**; chromogenic material fluoran copying; **photoimaging** recording fluoran **color former**; electrothermal recording fluoran **color former**
- IT Copying paper
- Photoimaging** compositions and processes
- Recording materials
- (**color formers** for, fluoran derivs. as)
- IT Friedel-Crafts reaction catalysts
- (for condensation of benzophenone derivs. with aminophenol derivs.)
- IT Condensation reaction
- (of benzophenone derivs. and aminophenol derivs. in preparation of fluoran derivs. for **photoimaging** and recording)
- IT Recording materials
- (thermal, **color formers** for, fluoran derivs. as)
- IT 88429-32-7    88429-33-8    88429-34-9    88429-35-0    88429-36-1
- 88429-37-2    88429-38-3    88429-39-4    88429-40-7    88429-41-8
- 88429-42-9    88429-43-0    88433-19-6
- RL: USES (Uses)
- (**color former**, for **photoimaging** and recording systems)
- IT 88429-29-2
- RL: USES (Uses)
- (**color former**, for recording compns.)
- IT 88429-31-6
- RL: USES (Uses)
- (**color former**, for recording systems)

- IT 7664-93-9, uses and miscellaneous  
RL: USES (Uses)  
(condensation of benzophenone derivs. and aminophenol derivs. catalyzed by, in preparation of fluoran derivs. for **photoimaging** and recording)
- IT 119-61-9DP, derivs. 5809-23-4P 52007-93-9P 85448-87-9P 88429-13-4P  
RL: PREP (Preparation)  
(condensation with aminophenol derivs. in preparation of fluoran derivs. for **photoimaging** and recording systems)
- IT 88429-14-5  
RL: USES (Uses)  
(condensation with aminophenol derivs., in preparation of fluoran derivs. for **photoimaging** and recording systems)
- IT 122-39-4D, derivs. 123-30-8D, derivs. 134-32-7D, derivs.  
36982-53-3D, derivs. 88429-23-6  
RL: USES (Uses)  
(condensation with benzophenone derivs., in preparation of fluoran derivs. for recording and **imaging**)
- IT 42530-36-9P  
RL: PREP (Preparation)  
(condensation with ethoxyacetyldiphenylamine in preparation of fluoran derivative color formers for **photoimaging** and recording)
- IT 88429-28-1  
RL: USES (Uses)  
(condensation with hydroxydibutylaminobenzoylbenzoic acid, in preparation of fluoran derivs., for **photoimaging** and recording)
- IT 85243-04-5 88429-16-7 88429-18-9 88429-19-0 88429-22-5  
88429-23-6D, derivs. 88429-24-7  
RL: USES (Uses)  
(condensation with hydroxydiethylaminobenzoylbenzoic acid, in preparation of fluoran derivs. for **photoimaging** and recording)
- IT 88429-26-9  
RL: USES (Uses)  
(condensation with hydroxydiethylaminobenzoylbenzoic acid, in preparation of fluoran derivs., for recording and **photoimaging**)
- IT 88429-27-0  
RL: USES (Uses)  
(condensation with hydroxydimethylaminobenzoylbenzoic acid, in preparation of fluoran derivs. for **photoimaging** and recording)
- IT 88433-18-5  
RL: USES (Uses)  
(condensation with hydroxyethylbenzylaminobenzoylbenzoic acid, in preparation of fluoran derivs. for **photoimaging** and recording)
- IT 88429-20-3  
RL: USES (Uses)  
(condensation with hydroxyethylbenzylaminobenzoylbenzoic acid, in preparation of fluoran derivs., for **photoimaging** and recording)
- IT 88429-25-8  
RL: USES (Uses)  
(condensation with hydroxyethylmethylphenylaminobenzoylbenzoic acid, in preparation of fluoran derivs. for **photoimaging**)

IT 122-87-2  
 RL: USES (Uses)  
 (condensation with hydroxymethylbenzylaminobenzoylbenzoic acid, in preparation of fluoran derivs. for **photoimaging** and recording)

IT 88429-17-8  
 RL: USES (Uses)  
 (condensation with hydroxymethylhexylaminobenzoylbenzoic acid, in preparation of fluoran derivs., for **photoimaging** and recording)

IT 23689-01-2  
 RL: USES (Uses)  
 (condensation with hydroxypyrrolidinylbenzoylbenzoic acid, in preparation of fluoran derivs. for **photoimaging** and recording)

IT 24460-11-5  
 RL: USES (Uses)  
 (condensation with hydroxytrifluoromethyl diphenylamine, in preparation of fluoran derivs., for **photoimaging** and recording)

IT 49742-68-9  
 RL: USES (Uses)  
 (condensation with methoxyacetyldiphenylamine, in preparation of fluoran derivative **color** formers for **photoimaging** and recording)

IT 55109-91-6  
 RL: USES (Uses)  
 (condensation with methoxyhydroxybenzoyldiphenylamine, in preparation of fluoran derivs., for **photoimaging** and recording)

IT 88429-15-6  
 RL: USES (Uses)  
 (condensation with methylethoxyacetyldiphenylamine, in preparation of fluoran derivs. for **photoimaging** and recording)

IT 54574-82-2  
 RL: USES (Uses)  
 (condensation with methylethoxytrifluoromethyl diphenylamine, in preparation of fluoran derivs., for **photoimaging** and recording)

IT 7681-65-4 9002-89-5 13463-67-7, uses and miscellaneous  
 RL: USES (Uses)  
 (electrothermal recording material containing, **color** formers for, fluoran derivs. as)

IT 80-05-7, uses and miscellaneous 124-26-5 557-05-1 9004-62-0  
 9011-13-6D, salt  
 RL: USES (Uses)  
 (heat-sensitive recording material containing, fluoran derivative **color** formers for)

IT 558-13-4 9003-53-6  
 RL: USES (Uses)  
 (**photoimaging** material containing, **color** formers for, fluoran derivs. as)

IT 88429-56-5P 88429-57-6P 88429-58-7P 88429-59-8P 88433-21-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and application of, as **color** former for recording and **photoimaging**)

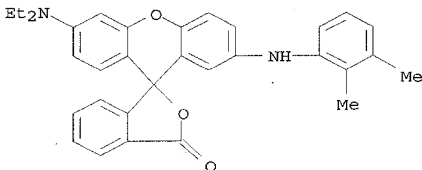
IT 88429-81-6P 88429-82-7P 88429-83-8P 88429-84-9P 88429-85-0P  
 88429-86-1P 88429-87-2P 88429-88-3P 88429-89-4P 88429-90-7P

88429-91-8P 88429-92-9P 88429-93-0P 88429-94-1P 88429-95-2P  
 88429-96-3P 88429-97-4P 88429-98-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and application of, for **photoimaging** and recording)  
 IT 85243-08-9P 88429-68-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and application of, for recording and **photoimaging**)  
 IT 596-24-7DP, derivs.  
 RL: PREP (Preparation)  
 (preparation of, as color formers for **photoimaging** and recording)  
 IT 85443-44-3P 88429-99-6P **88430-00-6P** 88430-01-7P  
 88430-02-8P 88430-03-9P 88430-04-0P 88430-05-1P 88430-06-2P  
 88430-07-3P 88430-08-4P 88430-09-5P **88430-10-8P**  
 88430-11-9P 88430-40-4P  
 RL: PREP (Preparation)  
 (preparation of, for **photoimaging** and recording)  
 IT 88429-69-0P **88429-70-3P** 88429-71-4P 88429-72-5P  
 88429-73-6P 88429-74-7P 88429-75-8P 88429-76-9P 88429-77-0P  
**88429-78-1P 88429-79-2P 88429-80-5P**  
 RL: PREP (Preparation)  
 (preparation of, for recording and **photoimaging**)  
 IT 29578-91-4P 88429-44-1P 88429-45-2P **88429-46-3P**  
**88429-47-4P** 88429-48-5P 88429-49-6P 88429-50-9P  
**88429-51-0P** 88429-52-1P 88429-53-2P **88429-54-3P**  
 88429-55-4P 88429-60-1P 88429-61-2P 88429-62-3P 88429-63-4P  
 88429-64-5P 88429-65-6P 88429-66-7P 88429-67-8P **88430-41-5P**  
 88433-20-9P 88433-22-1P  
 RL: PREP (Preparation)  
 (preparation of, for recording and **photoimaging** systems)  
 IT 88429-30-5P  
 RL: PREP (Preparation)  
 (preparation of, for recording systems)  
 IT 9003-55-8  
 RL: USES (Uses)  
 (pressure-sensitive recording material containing, color formers  
 for, fluoran derivs. as)  
 IT 53770-52-8  
 RL: USES (Uses)  
 (pressure-sensitive recording materials containing, color formers  
 for, fluoran derivs. as)  
 IT 88429-21-4  
 RL: USES (Uses)  
 (reaction with hydroxydiethylaminobenzoylbenzoic acid, in preparation of  
 fluoran derivs. for **photoimaging** and recording)  
 IT 102-50-1  
 RL: USES (Uses)  
 (reaction with hydroxydiethylaminobenzoylbenzoic acid, in preparation of  
 fluoran derivs., for **photoimaging** and recording)

L36 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1983:9949 CAPLUS

KOROMA EIC1700

DOCUMENT NUMBER: 98:9949  
 TITLE: Sensitization of free-radical photographic materials by optical development  
 AUTHOR(S): Shirakawa, Takashi  
 CORPORATE SOURCE: Nippon Hoso Kyokai, Tokyo, Japan  
 SOURCE: Giken Geppo (Nippon Hoso Kyokai) (1982), 25(3), 87-97  
 CODEN: NHKGDR; ISSN: 0027-6561  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese  
 AB Coloration and sensitization mechanisms of free-radical photog. materials based on asym. fluoran derivs. and other similar compds. are exptl. and theor. investigated. The use of the free-radical photog. materials for electron-beam and laser recording processes were also considered.  
 IT 77946-11-3  
 RL: USES (Uses)  
 (free-radical photoimaging materials containing, coloration and sensitization mechanisms of)  
 RN 77946-11-3 CAPLUS  
 CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-(diethylamino)-2'-[(2,3-dimethylphenyl)amino]- (9CI) (CA INDEX NAME)



CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST free radical photog fluoran deriv; electron beam recording; laser recording free radical photog  
 IT Recording materials  
 (electron-beam, free-radical photoimaging materials as, coloration and sensitization mechanisms of)  
 IT Recording materials  
 (optical, laser, free-radical photoimaging materials as, coloration and sensitization mechanisms of)  
 IT 1249-97-4 1552-42-7 5339-80-0 21121-62-0 21934-68-9 24460-07-9  
 24460-10-4 24460-39-7 29199-09-5 29512-46-7 29512-49-0  
 34342-67-1 34372-72-0 35517-39-6 35644-89-4 35783-51-8  
 35837-72-0 37608-71-2 37608-72-3 38660-35-4 42961-68-2  
 43038-92-2 52470-05-0 68506-98-9 77946-10-2 77946-11-3  
 77946-12-4 77946-13-5 77946-14-6 77946-15-7 77946-16-8  
 77946-17-9 77946-18-0 77967-37-4 83957-09-9  
 RL: USES (Uses)  
 (free-radical photoimaging materials containing,

coloration and sensitization mechanisms of)

L36 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1981:415892 CAPLUS

DOCUMENT NUMBER: 95:15892

TITLE: Sensitization of free-radical sensitive materials by optical development. Relation between optical development characteristics and the molecular structure of color former

AUTHOR(S): Shirakawa, Takashi; Miyazawa, Yoshihide

CORPORATE SOURCE: Tech. Res. Lab., NHK (Japan Broadcast. Corp.), Tokyo, 157, Japan

SOURCE: Nippon Shashin Gakkaishi (1981), 44(1), 30-46

CODEN: NSGKAP; ISSN: 0369-5662

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Images of various colors can be optically developed in free-radical photosensitive materials containing CBr<sub>4</sub> and fluoran derivs. as color formers. The optical development characteristics and mol. structure of various fluorans are described along with the effect of 3- and 7-amino groups on the fluorans and the d. of protons produced during dye formation on the optical development speed and color of the materials.

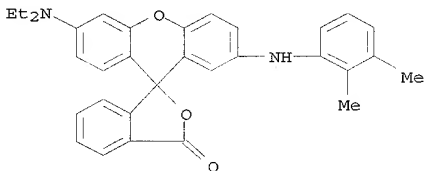
IT 77946-11-3

RL: USES (Uses)

(photoimaging compns. containing carbon tetrabromide and, free-radical, optical development in)

RN 77946-11-3 CAPLUS

CN Spiro[isobenzofuran-1(3H),9']-[9H]xanthen]-3-one, 6'-(diethylamino)-2'-[(2,3-dimethylphenyl)amino]- (9CI) (CA INDEX NAME)



CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)

ST fluoran free radical photoimaging; optical development free radical photoimaging

IT Ultraviolet and visible spectra

(of fluoran derivs., use as color formers in free-radical photoimaging compns. in relation to)

IT Nuclear magnetic resonance

(of fluoran derivs., use as color formers in free-radical photoimaging materials in relation to)

IT Vinyl acetal polymers



RL: USES (Uses)

(butyrals, photoimaging compns. containing carbon tetrabromide, fluoran derivative color former, and, free-radical, optical development in)

IT Photoimaging compositions and processes

(free-radical, containing fluoran derivs. as color formers, optical development in relation to)

IT 1249-97-4 1552-42-7 5339-80-0 21121-62-0 21934-68-9 24460-07-9  
 24460-10-4 24460-39-7 29199-09-5 29512-46-7 34342-67-1  
 34372-72-0 35517-39-6 35644-82-7 35783-51-8 35837-72-0  
 37114-79-7 37608-71-2 37608-72-3 38660-35-4 42961-68-2  
 43038-92-2 52470-05-0 68506-98-9 77946-10-2 77946-11-3  
 77946-12-4 77946-13-5 77946-14-6 77946-15-7 77946-16-8  
 77946-17-9 77946-18-0 77946-19-1 77967-37-4

RL: USES (Uses)

(photoimaging compns. containing carbon tetrabromide and, free-radical, optical development in)

IT 9003-53-6

RL: USES (Uses)

(photoimaging compns. containing carbon tetrabromide, fluoran derivative color former, and, free-radical, optical development in)

IT 558-13-4

RL: USES (Uses)

(photoimaging materials containing fluoran derivs. and, optical development in)

L36 ANSWER 14 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:541030 CAPLUS

DOCUMENT NUMBER: 93:141030

TITLE: Phototropic photosensitive compositions containing fluoran colorformer

INVENTOR(S): Reardon, Edward Joseph, Jr.

PATENT ASSIGNEE(S): Dynachem Corp., USA

SOURCE: Eur. Pat. Appl., 78 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

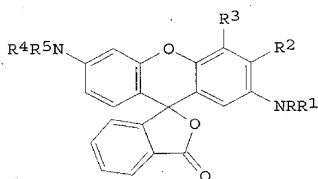
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 5380	A2	19791114	EP 1979-300796	19790509
EP 5380	B1	19820106		
EP 5380	A3	19791128		
R: BE, CH, DE, FR, GB, NL, SE				
CA 1164710	A1	19840403	CA 1979-326323	19790425
AU 7946768	A1	19791115	AU 1979-46768	19790504
AU 523542	B2	19820805		
JP 55013780	A2	19800130	JP 1979-56880	19790509
JP 63052369	B4	19881018		

US 4343885	A	19820810	US 1980-195285	19801008
PRIORITY APPLN. INFO.:			US 1978-904145	19780509
			US 1979-97096	19791123

GI



I

AB Phototropic compns. containing a polymerizable, curable, or crosslinkable component, a photoinitiator, a fluoran color-former with the formula I (R,R1 = H, alkyl, alkenyl, alkoxyalkyl, alkoxycarboxylalkyl acyl, aryl, or together form a heterocycle; R2 = H, alkyl, alkoxy, halogen, amino, aryl, aryloxy; R3 = H, alkyl, alkoxy, amino, or the same as R,R1 above; R4, R5 are the same as R,R1 above), and latent activator that releases or promotes the release of a Lewis acid are described. These compns. are especially useful in the production of dry film photoresists for use in the electronics industry to manufacture printed circuits. Thus, a typical composition contained Acryloid

A-101

60.3, trimethylolpropane triacrylate 19.6, tetraethylene glycol diacrylate 9.8, benzophenone 3.4, 2,2'-methylene bis(4-ethyl-6-tert-butyl)phenol 0.18, Modaflow 0.15, tricresyl phosphate 4.31, 4,4'-bis(dimethylamino)benzophenone 0.45, CBr3CONH2 1.51, I (R = Me; R1 = CH2CO2Et; R2, R3 = H; R4,R5 = Et) 0.3, and MeCOEt 195 parts by weight

IT

29512-45-6

RL: USES (Uses)

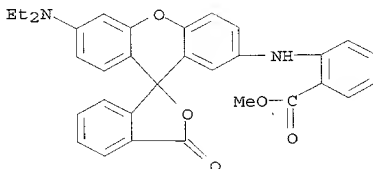
(photoimaging composition containing, phototropic)

RN

29512-45-6 CAPLUS

CN

Benzoic acid, 2-[[7'-(diethylamino)-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen-3'-yl]amino]-, methyl ester (9CI) (CA INDEX NAME)



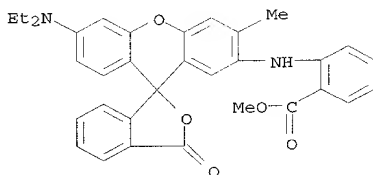
IT 72387-49-6

RL: USES (Uses)

(photoimaging compns. containing, phototropic)

RN 72387-49-6 CAPLUS

CN Benzoic acid, 2-[[6'-(diethylamino)-3'-methyl-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-2'-yl]amino]-, methyl ester (9CI) (CA INDEX NAME)



IC G03C001-68; G03C001-733; G03F007-02

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)

ST phototropic photosensitive compn fluoran;  
color former fluoran photoimaging

IT Acrylic polymers, uses and miscellaneous

Epoxy resins, uses and miscellaneous

RL: USES (Uses)

(photoimaging compns. containing fluoran color-former  
and, phototropic)

IT Urethane polymers, uses and miscellaneous

RL: USES (Uses)

(acrylate-terminated, photoimaging compns. containing fluoran  
color-former and, phototropic)

IT Paraffin waxes and Hydrocarbon waxes, compounds

RL: USES (Uses)

(chlorinated, photoimaging compns. containing fluoran  
color-former and, phototropic)

IT Paraffin waxes and Hydrocarbon waxes, uses and miscellaneous

RL: USES (Uses)

(microcryst., photoimaging compns. containing fluoran  
color-former and, phototropic)

IT Resists

(photo-, dry-film, containing fluoran color formers)

IT Photoimaging compositions and processes

(phototropic, containing fluoran color formers)

IT Electric circuits

(printed, dry-film photoresist containing fluoran color  
-former in fabrication of)

IT	21121-62-0	26206-78-0	26628-47-7	29512-44-5	29512-45-6
	29512-46-7	29512-49-0	29578-91-4	29579-01-9	34372-72-0
	35837-72-0	36838-72-9	55773-01-8	73852-07-0	73852-08-1
	73852-09-2	73852-10-5	73852-11-6	73852-12-7	

RL: USES (Uses)  
 (photoimaging composition containing, phototropic)

IT 86-39-5 87-58-1 87-82-1 88-24-4 90-94-8 95-14-7 96-13-9  
 98-86-2, properties 103-11-7 107-10-8, properties 108-01-0  
 108-32-7 115-20-8 119-53-9 119-61-9, properties 121-44-8,  
 properties 126-72-7 128-09-6 134-81-6 144-48-9 306-52-5  
 486-25-9 492-22-8 515-84-4 530-44-9 558-13-4 594-47-8 594-65-0  
 598-70-9 918-00-3 927-62-8 1124-05-6 1330-78-5 1529-68-6  
 1675-54-3 2124-31-4 2223-82-7 2386-87-0 2436-77-3 2461-18-9  
 2935-44-6 3524-68-3 5398-24-3 6175-45-7 6320-96-3 7575-23-7  
 9011-14-7 9011-14-7 10287-53-3 12542-30-2 13048-33-4 13686-37-8  
 14779-78-3 15081-02-4 15625-89-5 17831-71-9 22499-12-3  
 23162-64-3 26672-67-3 29170-71-6 36355-01-8 36511-35-0  
 37167-59-2 38800-47-4 40715-86-4 52016-01-0 53814-24-7  
 54735-63-6 56927-95-8 66208-29-5 66208-30-8 73003-80-2  
 73852-13-8 73852-14-9 73852-15-0 73882-79-8

RL: USES (Uses)  
 (photoimaging compns. containing fluoran color-former  
 and, phototropic)

IT 50-29-3, properties 56-23-5, properties 57-15-8 67-72-1 75-03-6  
 75-47-8 76-00-6 76-08-4 77-47-4 79-94-7

RL: PRP (Properties)  
 (photoimaging compns. containing fluoran color-former  
 and, phototropic)

IT 29512-46-7 55772-81-1 72387-49-6 73852-16-1

RL: USES (Uses)  
 (photoimaging compns. containing, phototropic)

IT 24460-06-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and phenylation of)

IT 85-44-9

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (hydroxyphenyl)pyrrolidine)

IT 49742-68-9

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with benzoanisidine)

IT 100-02-7, reactions 2835-99-6 61638-01-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carboxydiethylaminohydroxybenzophenone)

IT 1008-97-5 17377-95-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carboxyhydroxypyrrolidinylbenzophenone)

IT 88-65-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with fluoran derivs.)

IT 5809-23-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with nitrophenol)

IT 25912-16-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with phthalic anhydride)

L36 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:416984 CAPLUS

DOCUMENT NUMBER: 93:16984

TITLE: Carbonylic halides as activators for  
**phototropic compositions**

INVENTOR(S): Reardon, Edward Joseph, Jr.; Lipson, Melvin A.

PATENT ASSIGNEE(S): Dynachem Corp., USA

SOURCE: Eur. Pat. Appl., 77 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 5379	A2	19791114	EP 1979-300795	19790509
EP 5379	B1	19811223		
EP 5379	A3	19791128		
EP 5379	B2	19860604		
R: BE, CH, DE, FR, GB, NL, SE				
CA 1153610	A1	19830913	CA 1979-326324	19790425
AU 7946767	A1	19791115	AU 1979-46767	19790504
AU 523499	B2	19820729		
JP 54147829	A2	19791119	JP 1979-56221	19790508
JP 63052368	B4	19881018		
US 4552830	A	19851112	US 1983-555444	19831125

PRIORITY APPLN. INFO.:

US 1978-904144 19780509  
US 1980-195168 19801008  
US 1981-317954 19811103

AB Comps., which are useful in the production of resists for use in the electronics industry to manufacture printed circuits, are composed of a polymerizable, curable, or crosslinkable component, a **photoinitiator**, a color former capable of changing color on contact with a suitable activator, and a latent activator containing an organic halide. The organic halide is a carbonyl compound, such as an

aliphatic or cycloaliph. ketone or an ester or amide of a decarboxylic acid. A typical composition for the production of a dry resist material contains a methacrylic acid-styrene (25:75) copolymer 57.0, trimethylolpropane triacrylate 24.0, tetraethylene glycol diacrylate 12.2, benzophenone 4.0, 4,4'-bis(dimethylamino)benzophenone 0.6, 2-anilino-3-methoxy-6-diethylamino-fluoran 0.3, di-Et iodomalate 1.5, benzotriazole 0.4, and MeCOEt 160.0 parts kg weight A dry resist using this composition is used to produce high quality printed circuit boards.

IT 29512-45-6 72387-49-6

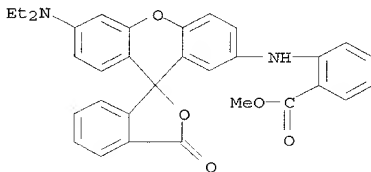
RL: USES (Uses)

(phototropic comps. containing halocarbonyls and, for dry photoresists)

RN 29512-45-6 CAPLUS

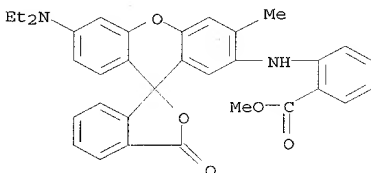
CN Benzoic acid, 2-[[7'-(diethylamino)-3-oxospiro[isobenzofuran-1(3H),9']-

[9H]xanthen-3'-yl]amino]-, methyl ester (9CI) (CA INDEX NAME)



RN 72387-49-6 CAPLUS

CN Benzoic acid, 2-[[6'-(diethylamino)-3'-methyl-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-2'-yl]amino]-, methyl ester (9CI) (CA INDEX NAME)



IC G03C001-68; G03C001-733; G03F007-02

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic Processes)

ST **phototropic compn dry photoresist; resist**  
**photo dry phototropic compn; halocarbonyl dry**  
**photoresist; amine dry photoresist; fluoran**  
**color former dry photoresist**

IT Soybean oil

RL: USES (Uses)

(epoxidized, polyacrylates, **phototropic compns. containing, for dry photoresists**)

IT Acrylic polymers, uses and miscellaneous

RL: USES (Uses)

(**phototropic compns. containing, for dry photoresist**  
**production**)

IT Amines, uses and miscellaneous

RL: USES (Uses)

(**phototropic compns. containing, for dry photoresists**)

IT Photoimaging compositions and processes

(**phototropic, containing halocarbonyls and fluoran color**  
**formers**)

IT Epoxy resins, uses and miscellaneous

RL: USES (Uses)

(acrylate-terminated, **phototropic compns. containing, for dry**

photoresist production)

IT Polyesters, uses and miscellaneous  
(acrylated urethane-modified, phototropic compns. containing, for dry photoresists)

IT Carbonyl compounds, uses and miscellaneous  
RL: USES (Uses)  
(halo, phototropic compns. containing, for dry photoresists)

IT Paraffin waxes and Hydrocarbon waxes, uses and miscellaneous  
RL: USES (Uses)  
(microcryst., phototropic compns. containing halocarbons, fluoran color formers and, for dry resists)

IT Resists  
(photo-, phototropic compns. for production of dry)

IT Electric circuits  
(printed, phototropic compns. containing halocarbons and fluoran color formers in fabrication of)

IT 2648-69-3 3200-96-2 21428-65-9 23162-64-3 29170-71-6 37167-59-2  
69394-08-7 73003-80-2 73817-26-2 73817-82-0 73817-83-1  
73817-84-2 73817-85-3 73817-86-4 73817-88-6 73817-89-7  
73817-90-0 73817-91-1 73817-92-2 73817-93-3 73817-94-4  
73817-95-5 73852-13-8  
RL: USES (Uses)  
(phototropic compns. containing fluoran color formers and, for dry photoresists)

IT 135-49-9 509-34-2 1325-85-5 1325-86-6 1332-85-0 2390-59-2  
2412-14-8 3248-93-9 5385-11-5 6359-16-6 6359-45-1 6837-66-7  
21121-62-0 26206-78-0 26628-47-7 29512-44-5 29512-45-6  
29512-46-7 29512-49-0 29578-91-4 29579-01-9 34372-72-0  
35837-72-0 36838-72-9 52080-58-7 55772-81-1 55773-01-8  
66225-66-9 72387-49-6 73852-07-0 73852-08-1 73852-09-2  
73852-10-5 73852-11-6 73852-12-7 73852-16-1  
RL: USES (Uses)  
(phototropic compns. containing halocarbons and, for dry photoresists)

IT 86-39-5 88-24-4 90-94-8 95-14-7 103-11-7 108-01-0 119-61-9,  
uses and miscellaneous 134-81-6 486-25-9 492-22-8 1330-78-5  
2223-82-7 3524-68-3 4986-89-4 7575-23-7 9010-92-8 9011-14-7  
9011-14-7 12542-30-2 13048-33-4 15625-89-5 17831-71-9 25215-62-7  
53814-24-7 54735-63-6 73882-79-8  
RL: USES (Uses)  
(phototropic compns. containing halocarbons, fluoran color formers and, for dry resists)

IT 90-94-8 107-10-8, uses and miscellaneous 108-01-0 110-97-4  
121-44-8, uses and miscellaneous 530-44-9 927-62-8 2124-31-4  
2436-77-3 10287-53-3 14779-78-3 26672-67-3 73852-14-9  
RL: USES (Uses)  
(phototropic compns. containing halocarbons, fluoran color formers, and, for dry photoresists)

IT 49742-68-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with amines)

IT 88-65-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with aminodiethylaminofluoran)

IT 24460-06-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with bromobenzoic acid)

IT 100-02-7, reactions 2581-34-2 2835-99-6 61638-01-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carboxydiethylaminohydroxybenzophenone)

IT 1008-97-5 17377-95-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carboxyhydroxypyrrolidinylbenzophenone)

IT 5809-23-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with phenols)

L36 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1978:451448 CAPLUS  
 DOCUMENT NUMBER: 89:51448  
 TITLE: Energy beam recording materials  
 INVENTOR(S): Shirakawa, Takashi; Miyasawa, Yoshishige  
 PATENT ASSIGNEE(S): Japan Broadcasting Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52141633	A2	19771126	JP 1976-58255	19760520
JP 59050972	B4	19841211		

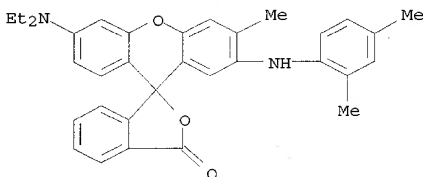
PRIORITY APPLN. INFO.: JP 1976-58255 19760520

AB Energy-beam (such as light, electron beam, etc.) sensitive recording materials contain organic polyhalides as the sensitizers and fluoran derivs. as the color formers. The recording materials have good sensitivity and the images obtained can be intensified by uniformly exposing the materials to red light. The recording materials are useful for real-time recording of television images, and photointensified images have spectral characteristics useful for readout of the recorded images by the flying spot method. Thus, CBr4 2, 3-diethylamino-7-dibenzylaminofluoran 2, polystyrene 8 g and PhMe-Me2CO (7:3 volume ratio) mixture 32 cm3 were mixed and the mixture was coated (7-μ dry) on a Nesa glass support. The recording material was irradiated with an electron beam (10-8 A/cm2, 10 s) to form bluish green images, heated at 90°, and exposed to a 1-kW halogen lamp through a red filter and IR-absorber filter to intensify the images (dark reddish purple).

IT 36431-22-8  
 RL: USES (Uses)  
 (electron-beam recording material containing organic polyhalides and, for



real-time television image recording)  
 RN 36431-22-8 CAPLUS  
 CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-(diethylamino)-2'-  
 [(2,4-dimethylphenyl)amino]-3'-methyl- (9CI) (CA INDEX NAME)



IC G03C001-727  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
 ST electron beam recording **photointensification**; fluoran polyhalide  
 electron beam recording  
 IT Recording  
 (electron-beam, composition containing fluoran derivs. and organic  
 polyhalides for)  
 IT 75-47-8 98-07-7 558-13-4  
 RL: USES (Uses)  
 (electron-beam recording material containing fluoran derivative and, for  
 real-time television image recording)  
 IT 24460-06-8 34372-72-0 35783-51-8 36431-22-8 66789-06-8  
 66789-07-9  
 RL: USES (Uses)  
 (electron-beam recording material containing organic polyhalides and, for  
 real-time television image recording)

L36 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1978:451409 CAPLUS  
 DOCUMENT NUMBER: 89:51409  
 TITLE: Optical and electron beam recording material  
 INVENTOR(S): Shirakawa, Takashi; Miyasawa, Yoshishige  
 PATENT ASSIGNEE(S): Japan Broadcasting Corp., Japan; Hodogaya Chemical  
 Co., Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52150618	A2	19771214	JP 1976-67059	19760610
PRIORITY APPLN. INFO.:			JP 1976-67059	19760610

AB **Photointensifiable radiation-sensitive image recording materials** contain polyhalogen compound type sensitizers and fluoran derivative type color formers. Thus, a mixture of CBr4 2, 3-diethylamino-7-dibenzylamino fluoran 2, polystyrene 8 g, and PhMe-Me2CO mixture (7:3 volume ratio) 37 cm3 was coated (7  $\mu$  dry) on a Nesa glass support to give a radiation-sensitive recording material. The material was irradiated with electron beam (10-8 A/cm2, at 30 kV), for 10 s to give bluish green images which were subsequently intensified by uniform exposure to a red light to give dark red images.

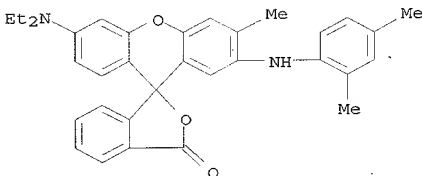
IT 36431-22-8

RL: USES (Uses)

(color formers, for photointensifiable radiation-sensitive recording material)

RN 36431-22-8 CAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-(diethylamino)-2'-[(2,4-dimethylphenyl)amino]-3'-methyl- (9CI) (CA INDEX NAME)



IC G03C001-727

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

ST free radical image recording material; electron beam

image recording; fluoran color former image

recording

IT Recording

(electron-beam, radiation sensitive compns. for, containing organic polyhalo compound and fluoran derivative)

IT **Photoimaging compositions and processes**

(free-radical, containing polyhalo compound and fluoran derivative)

IT 29512-46-7 29512-49-0 34372-72-0 35783-51-8 36431-22-8

56278-75-2 59129-79-2

RL: USES (Uses)

(color formers, for photointensifiable radiation-sensitive recording material)

IT 75-47-8 98-07-7 558-13-4

RL: USES (Uses)

(sensitizer, for photointensifiable radiation-sensitive recording materials)

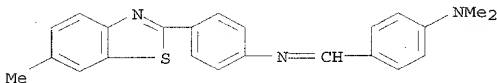
L36 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1960:54671 CAPLUS

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ORIGINAL REFERENCE NO.: 54:10606f-g  
 TITLE: Some classes of novel supersensitizers for 2,2'-cyanines  
 AUTHOR(S): Brunner, R.; Graf, A.; Scheibe, G.  
 CORPORATE SOURCE: Tech. Hochschule Munich, Germany  
 SOURCE: Zeitschrift fuer Wissenschaftliche Photographie, Photophysik und Photochemie (1959), 53, 214-25  
 CODEN: ZPPPAQ; ISSN: 0372-9788  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB Compds. of the type  $XN:Y(CH:CH)_nZ$ , where X is H, alkyl, or  $C_6H_4NR_2$  (R = alkyl or aryl); Y is N or CH; n = 0, 1; Z is aryl or  $C_6H_4NR_2$  (R = alkyl or aryl), including azo and azoxy compds., Schiff bases, and nitrones, were found to supersensitize 2,2'-cyanines. The efficiency of these compds. as supersensitizers is correlated with their being associated with mesomeric cationic structures. The compound p,p'-bis(dimethylamino)azoxybenzene supersensitized these dyes at concns. as low as  $10^{-8}$  mole per mole AgBr and per  $10^{-4}$  mole of sensitizer.  
 IT 65175-38-4, Benzothiazole, 2-[p-(p-dimethylaminobenzylideneamino)p henyl]-6-methyl-  
 (as photographic supersensitizer for 2,2'-cyanine dyes)  
 RN 65175-38-4 CAPLUS  
 CN Benzenamine, N,N-dimethyl-4-[[[4-(6-methyl-2-benzothiazolyl)phenyl]imino]m ethyl]- (9CI) (CA INDEX NAME)



CC 5 (Photography)  
 IT Azo compounds  
 Azoxy compounds  
 Nitrones  
 Schiff bases  
 (as photographic supersensitizers for 2,2'-cyanine dyes)  
 IT Photography  
 (sensitizers (super-), for 2,2'-cyanine sensitizing dyes)  
 IT 1H-Pyrrolo[1,2-a]quinolinium compounds, 3-(1-ethyl-2(1H)-quinolylidene)-2,3-dihydro-, iodide  
 Aniline, N,N-dimethyl-p-phenylazo-  
 Aniline, N,N-dimethyl-p-phenylazoxy-  
 Benzothiazolium compounds, 2-[N-(p-dimethylaminophenyl)formimidoyl]-3-methyl-, iodide  
 Piperidinium, 1-(p-dimethylaminobenzylidene)-, perchlorate  
 Quinolinium, 1-ethyl-2-(3-ethyl-2-benzothiazolylidene)ethyl-, chloride  
 (as photographic supersensitizer for 2,2'-cyanine dyes)

- IT 103-33-3, Azobenzene 138-89-6, Aniline, N,N-dimethyl-p-nitroso-  
 495-48-7, Azoxybenzene 586-96-9, Benzene, nitroso- 614-00-6, Aniline,  
 N-methyl-N-nitroso- 794-95-6, Aniline, 4,4'-azoxybis[N,N-dimethyl-  
 889-37-2, Aniline, N',N'-dimethyl-N,4'-methyldynedi- 2596-90-9,  
 Nitron,  $\alpha$ -(p-dimethylaminophenyl)-N-phenyl- 2929-84-2,  
 Benzaldehyde, p-dimethylamino-, oxime 3783-14-0, Rhodanine,  
 5-[2-(3-ethyl-2-benzothiazolinyldene)ethyldene]-3-phenyl- 10050-89-2,  
 Aniline, 4,4'-(methyldynenitrilo)bis[N,N-dimethyl- 10205-56-8,  
 Benzothiazole, 2-(p-dimethylaminophenyl)- 10595-51-4, Aniline,  
 N-methyl-p-nitroso- 14135-03-6, Pyridinium, 2-[N-(p-  
 dimethylaminophenyl)formimidoyl]-1-methyl-, iodide 15257-27-9,  
 p-Phenylenediamine, N,N'-bis(p-dimethylaminobenzylidene)- 16089-69-3,  
 Nitron,  $\alpha$ -(p-dimethylaminophenyl)-N-methyl- 20766-49-8,  
 Quinolinium, 1-ethyl-2-[(1-ethyl-2(1H)-quinolyldene)methyl]-  
 22756-37-2, Ammonium, (p-dimethylaminocinnamylidene)methylphenyl-,  
 perchlorate 29785-93-1, m-Toluidine, N,N-dimethyl-4-nitroso-  
 33981-24-7, Rhodanine, 5-(3-ethyl-2-benzothiazolinyldene)-3-phenyl-  
 65175-38-4, Benzothiazole, 2-[p-(p-dimethylaminobenzylideneamino)p  
 henyl]-6-methyl- 102011-34-7, p-Phenylenediamine, N'-(p-  
 dimethylaminocinnamylidene)-N,N-dimethyl- 104996-53-4, 1-Naphthylamine,  
 N,N-dimethyl-4-nitroso- 109595-70-2, Nitron, N, $\alpha$ -bis(p-  
 dimethylaminophenyl)- 113059-40-8, Rhodanine, 5-[4-(3-ethyl-2-  
 benzothiazolinyldene)-2-butenyldene]-3-phenyl-  
 (as photographic supersensitizer for 2,2'-cyanine  
 dyes)
- IT 6257-64-3, Aniline, 4,4'-azobis[N,N-dimethyl-  
 (preparation of)]

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